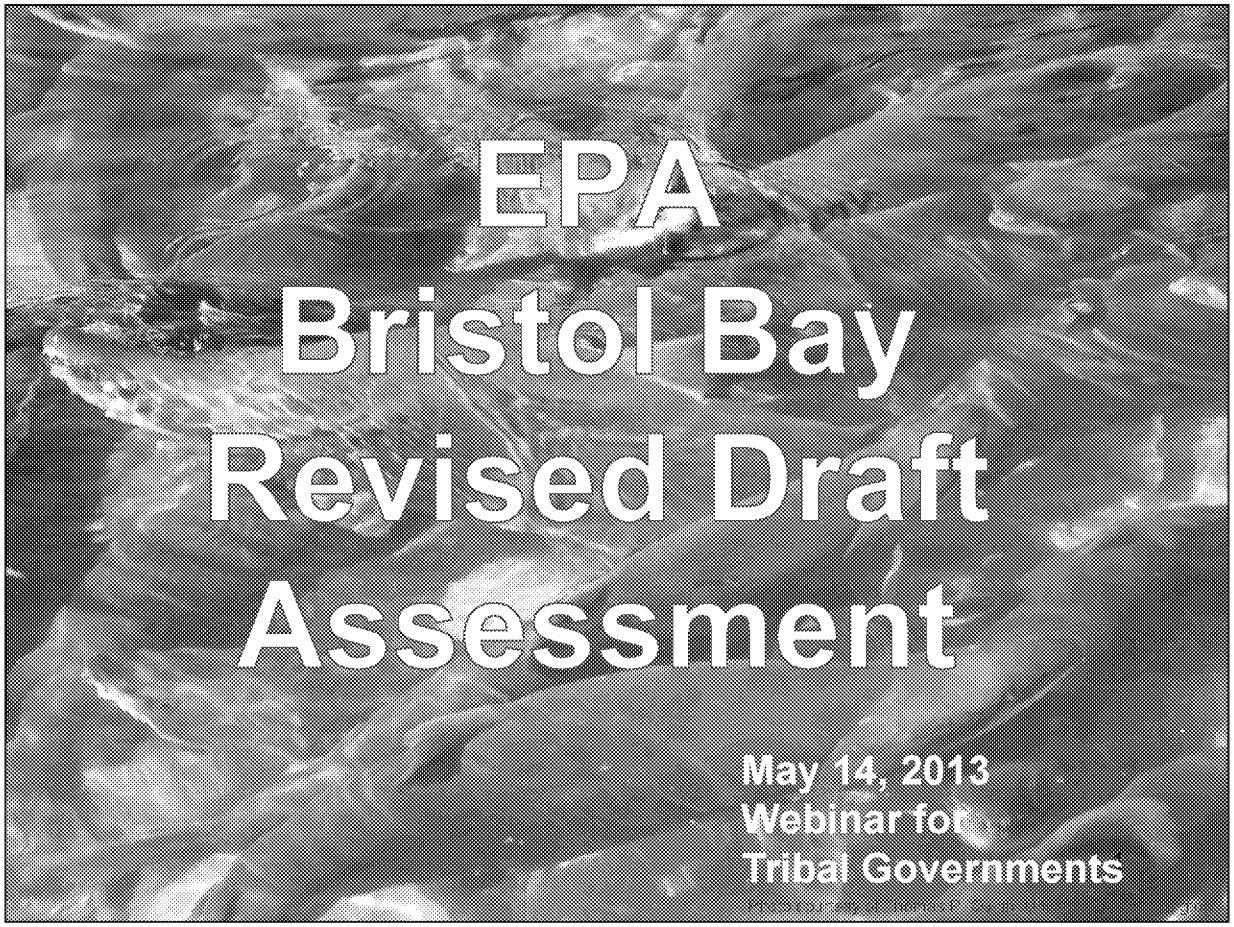
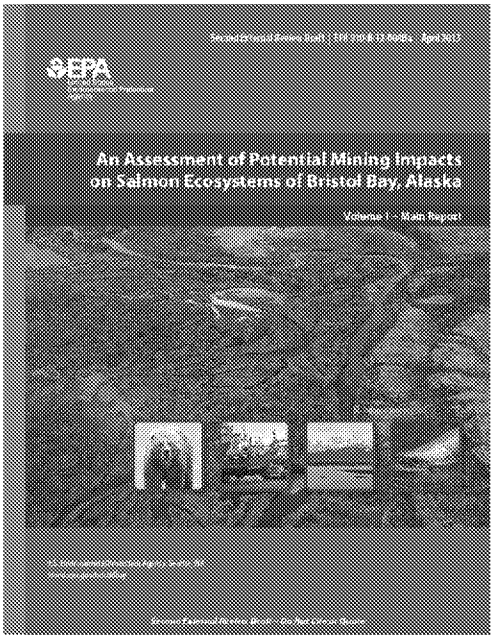

EPA
Bristol Bay
Revised Draft
Assessment
May 14, 2013
Webinar for
Tribal Governments

In this Presentation We Will ....

- Review the purpose and scope of the revised draft assessment.
- Review the process to date.
- Discuss changes made as a result of tribal input, public comment and peer review.
- Discuss risks that were evaluated
- Talk about next steps

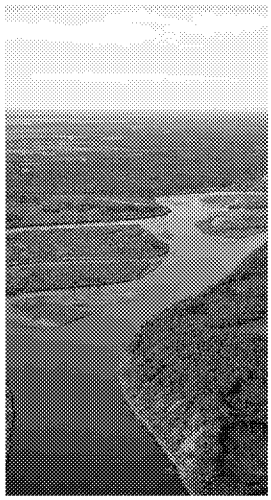


The purpose of this presentation is to give you a very brief overview of the revised draft watershed assessment and let you know where to find out more and provide input.

It has been two years since we began the assessment
Worked very hard to be accessible to stakeholders in the Bristol Bay region.
We have benefited from in formation provided by Tribal Leaders, Regional and Village corporations, fishermen, the Pebble Partnership and many interested groups.
Listened to your issues and concerns and are in the process of incorporating many of them into the assessment.

Throughout the presentation we will point out where to look in the revised assessment document for more information.

Review Why Did EPA Conduct an Assessment?



- To characterize Bristol Bay resources and understand potential impacts of large-scale mining on the fishery
- As a technical resource on the risks from mining for the public and for federal, state, and tribal governments
- To provide EPA with information to make future decisions.
- Under the Clean Water Act, EPA is responsible for water quality.

EPA conducted this assessment in response to petitions from nine federally recognized tribes that we initiate a process under Section 404(c) of the CWA to protect Bristol Bay natural resources from the effects of large scale mining. We also heard from other tribes and stakeholders who support development in the Bristol Bay watershed and have requested we take no action and wait for typical permitting processes.

These requests from Tribal governments were well substantiated requests for EPA to follow a process that has been in our regulations since 1979. Given our Tribal Trust and Government to Government responsibilities they deserved a diligent and judicious response.Therefore, EPA performed this assessment to better understand the watershed and its resources, BEFORE making a decision on how to respond to these competing petitions. The assessment will inform our response to these requests and any future actions EPA may take.

There have been some questions about EPA's authority to do this assessment. The Clean Water Act gives EPA the authority to collect information to help us make decisions about protecting water.

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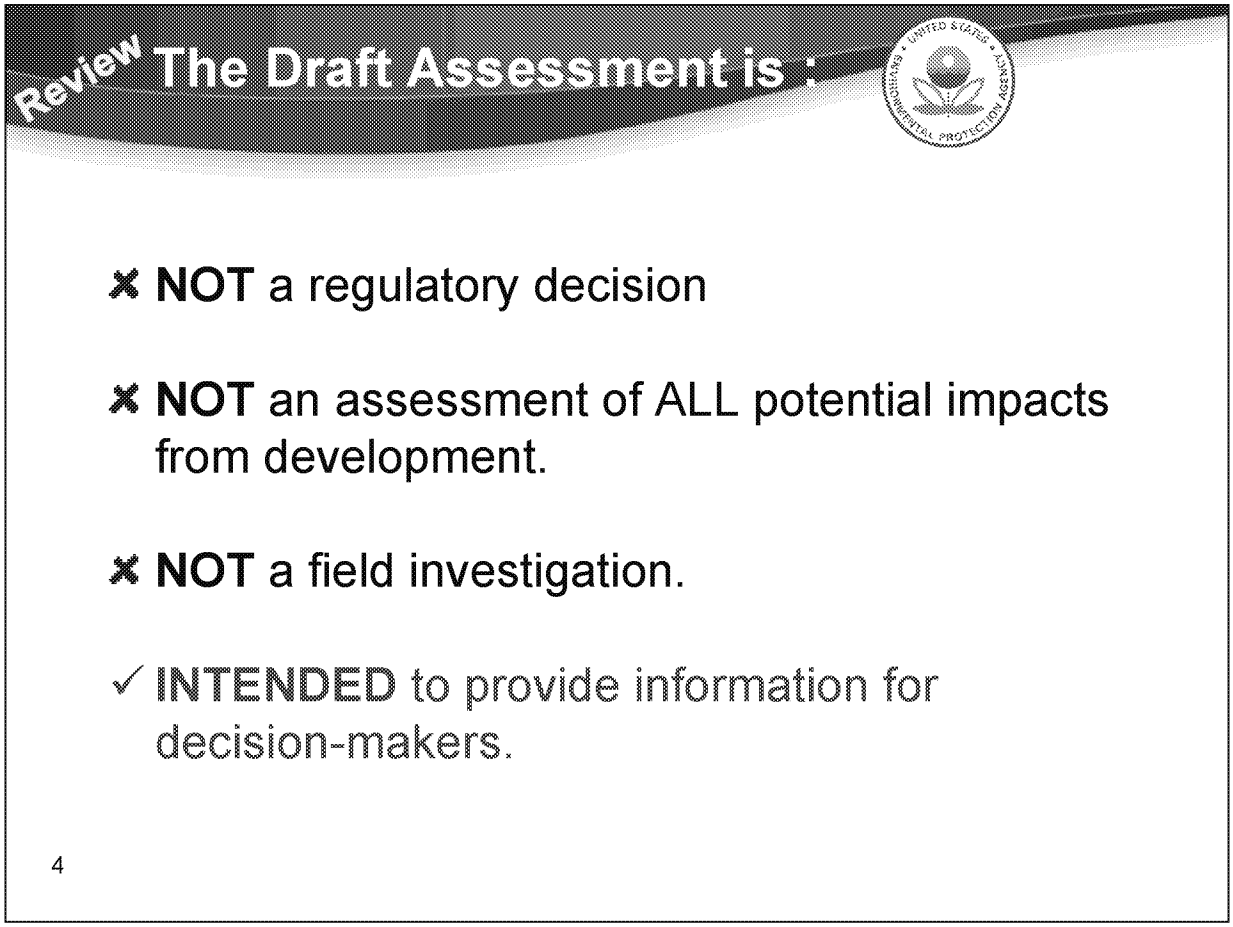
as they consider how best to address the challenges of mining and ecological protection in the Bristol Bay watershed. It will inform the ongoing discussions of the risks of mine development to the sustainability of the Bristol Bay salmon fisheries and thus will be of value to the many stakeholders in this debate.

The assessment also could inform the consideration of options for future action by government bodies. This includes USEPA, which has been petitioned by multiple groups to address mining activity in the Bristol Bay watershed using its authority under the Clean Water Act (CWA). Should specific mine projects reach the permitting stage, the assessment will enable state or federal permitting authorities to make informed decisions to grant, deny, or condition permits and/or conduct additional research or assessment as a basis for such decisions. USEPA is conducting this assessment consistent with its authority under the CWA Section 104(a) and (b).



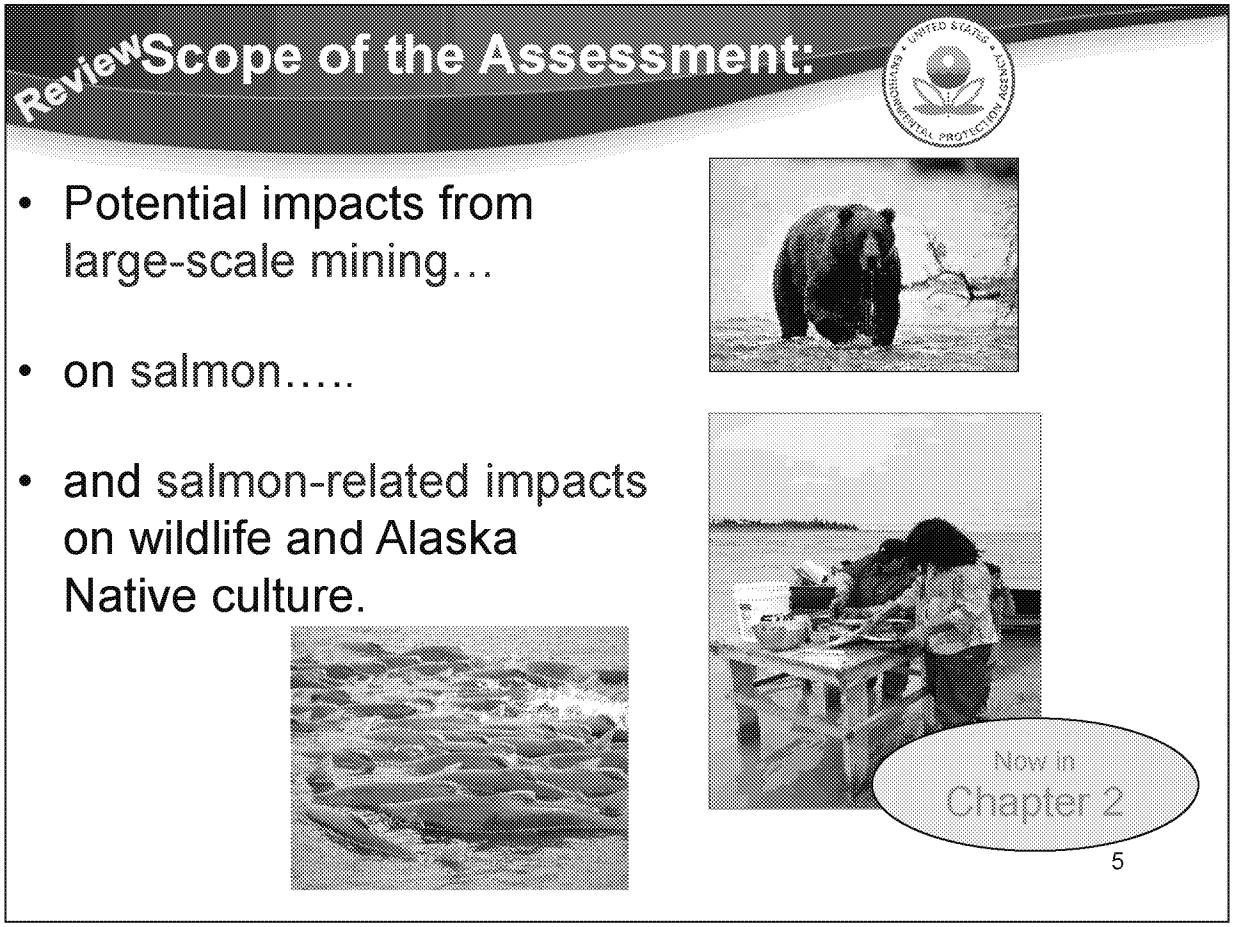
We have had many questions about the assessment and want to answer some of those questions up front.

This assessment is not a proposal or decision to restrict mining. We have heard many comments about whether there should be restrictions on mining activities. We are not here to talk about that – we first want to make sure we have the best science and information before we make any decisions about our response to those who asked us to take action.

The assessment is not comprehensive. It only looks at large-scale mining activities, and only looks at mining activities that would involve dredging and filling streams or wetlands.

We have also heard many questions about how this assessment may restrict other activities in the region, including fishing. I want to make it very clear that this assessment is ONLY about possible effects from large-scale mining. We are not evaluating OR considering placing restrictions on any other activities, including fishing or community development activities such as airstrips, boat docks, or buildings.

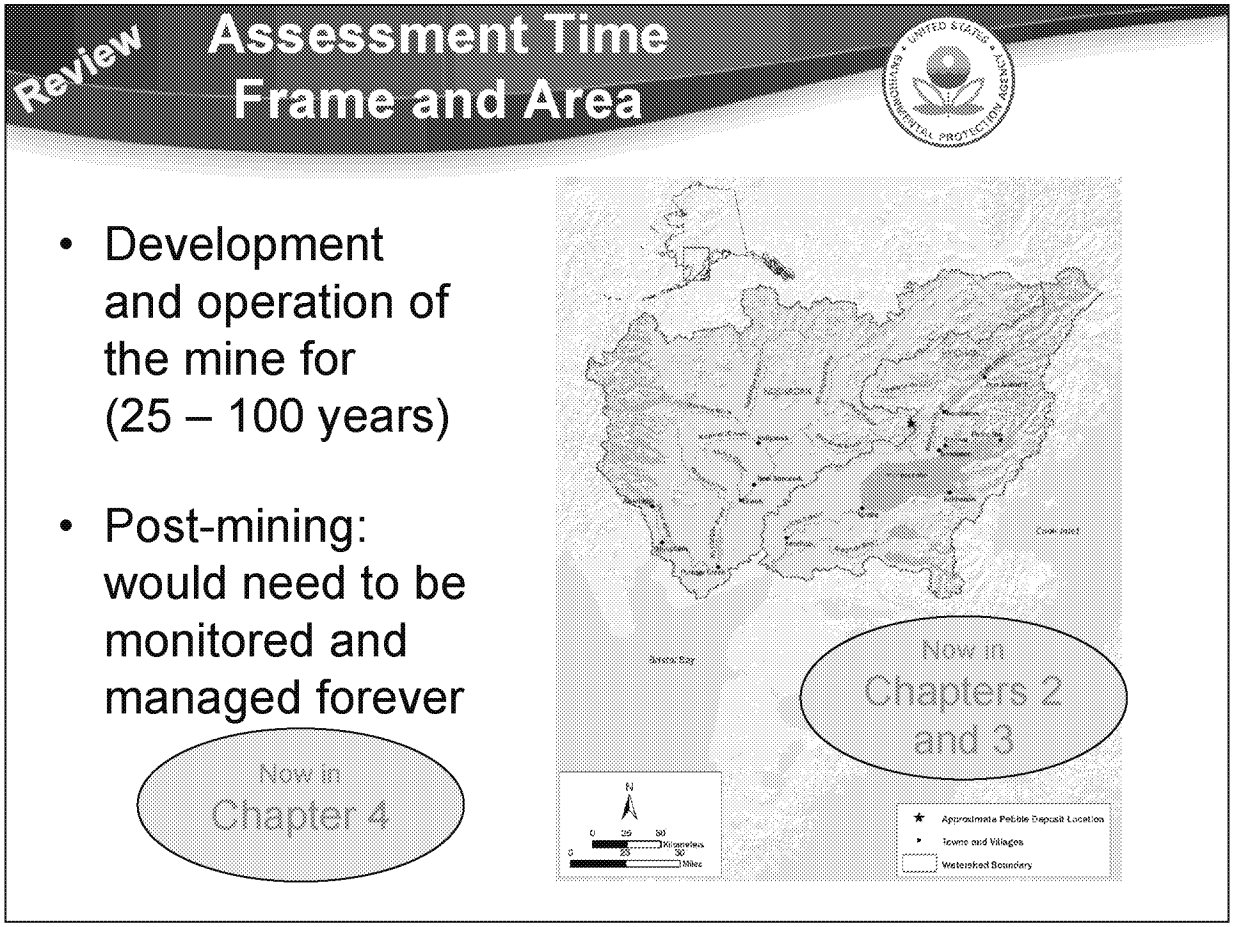
We did not plan to collect environmental data for the assessment. We used data that was already available.



Now let's talk about the draft assessment report.

As I said earlier, the draft assessment does not look at all possible effects of large scale mining. It's focus is the possible effects mining activities would have on salmon. It also considers what would happen to wildlife and Alaska Native cultures if salmon are affected by mining. It does not evaluate direct effects on wildlife or humans from mining development, only those related to effects on the fish.

The assessment is not focused on other development or activities – only on large-scale mining.



Next, we looked at the time frame for possible mining effects. Based on the mineral resources available, we looked at a long operational phase, and also considered that mine wastes would have to be managed forever after the closure of the mine.

We assumed that any mine would be designed and operated consistent with modern mining practices and that it would comply with all state and federal laws.

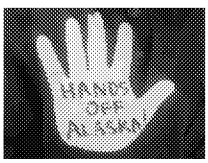
In the revised report, we identified five different spatial scales. The Nushagak and Kvichak watersheds are the focus of the assessment because they are open for mining development. We also look at information from the larger Bristol Bay and from the smaller watersheds draining the Pebble deposit site.

Public involvement and peer review

- EPA has conducted an open and transparent assessment process
- EPA has incorporated traditional knowledge and local information
- Peer review experts reviewed draft to ensure we are using the best available science
- Public comment was invited from May 18 to July 23, 2012
- Peer reviewers met for open deliberations in Anchorage in August

Public Comment Opportunity in Anchorage, Alaska

Anchorage



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Anchorage was our largest public meeting and the 900 seat capacity of the auditorium at the University of Anchorage campus was filled to overflowing. Many people came and told us exactly what they thought.

Meeting rooms in all six villages we visited were all filled to overflowing. At many of these meetings, we heard from elders with the assistance of translators. No matter what opinions were held about EPA or large-scale mining development, the people of Bristol Bay made us feel welcome in their communities.

Public Comment Opportunities in Bristol Bay Communities

Naknek

Nondalton

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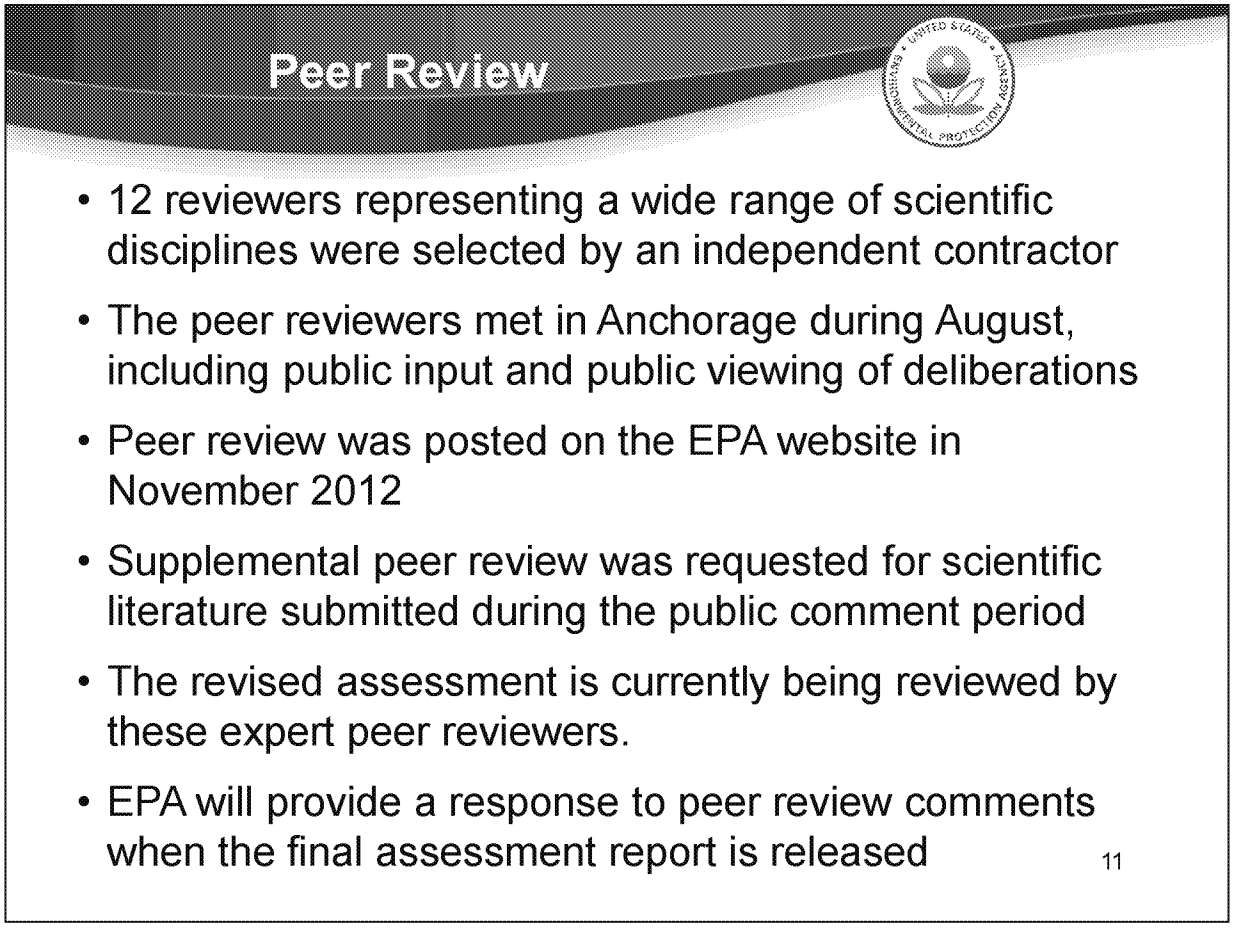
Here are a few more pictures taken during our week of public meetings. Villages and tribes shared their food and culture with EPA staff.

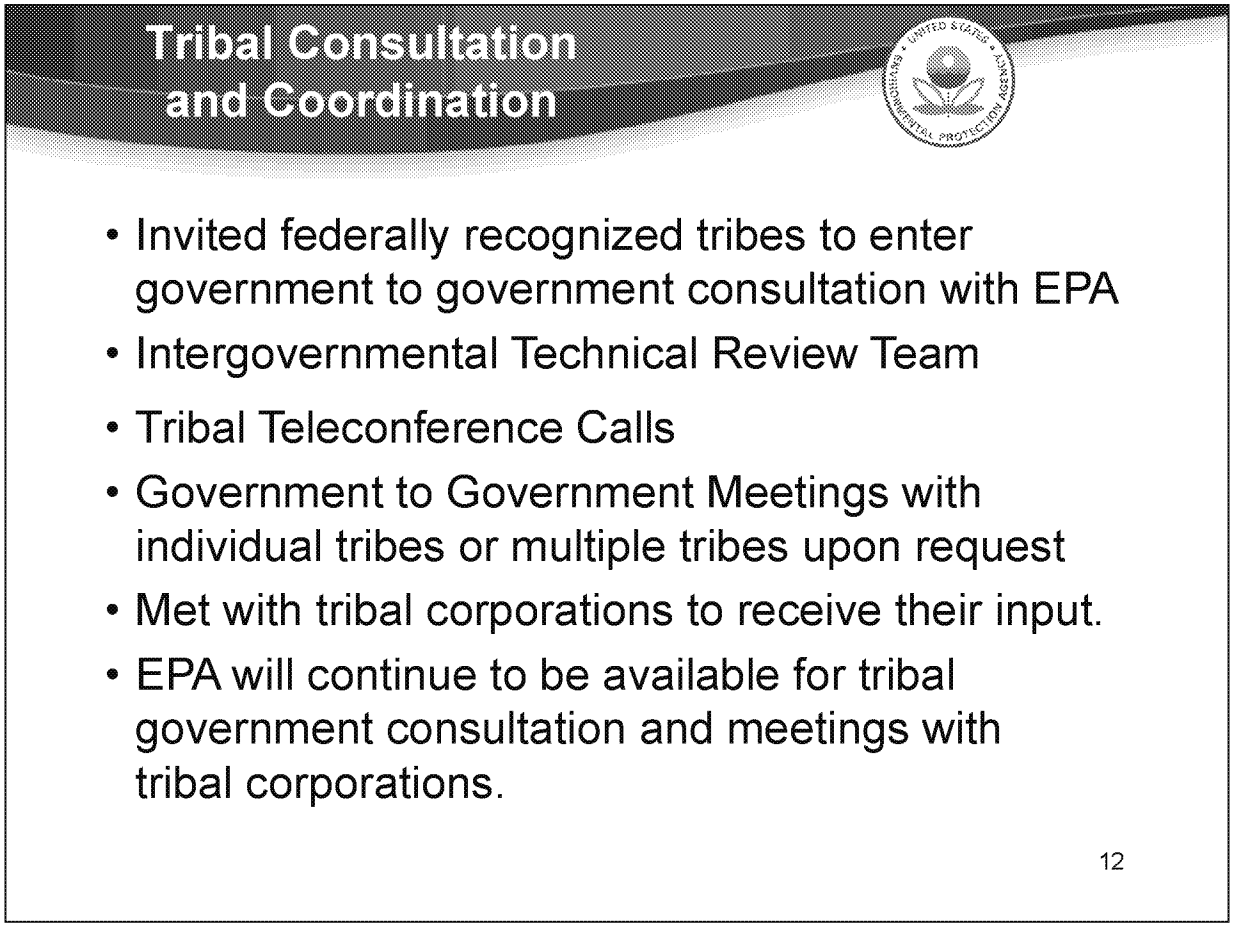


Peer review is an essential part of a highly significant scientific assessment like the one conducted in Bristol Bay. An independent contractor selected 12 expert peer reviewers. We provided an opportunity for the public to nominate peer reviewers for potential inclusion on the peer review panel.

The peer reviewers had expertise in many areas of scientific inquiry that are important to the draft assessment, including metals mining (particularly porphyry copper) , fisheries biology, hydrology, aquatic ecology, biogeochemistry, seismology, ecotoxicology, wildlife ecology, and/or (9) indigenous Alaskan cultures.

The peer reviewers met in Anchorage for three days in August. They listened to public testimony on the first day and their discussion on the second day was observed by the public.

The peer review report was posted on the EPA website on November 9, 2012. The charge questions that framed the peer reviewers work were developed with input from the public.

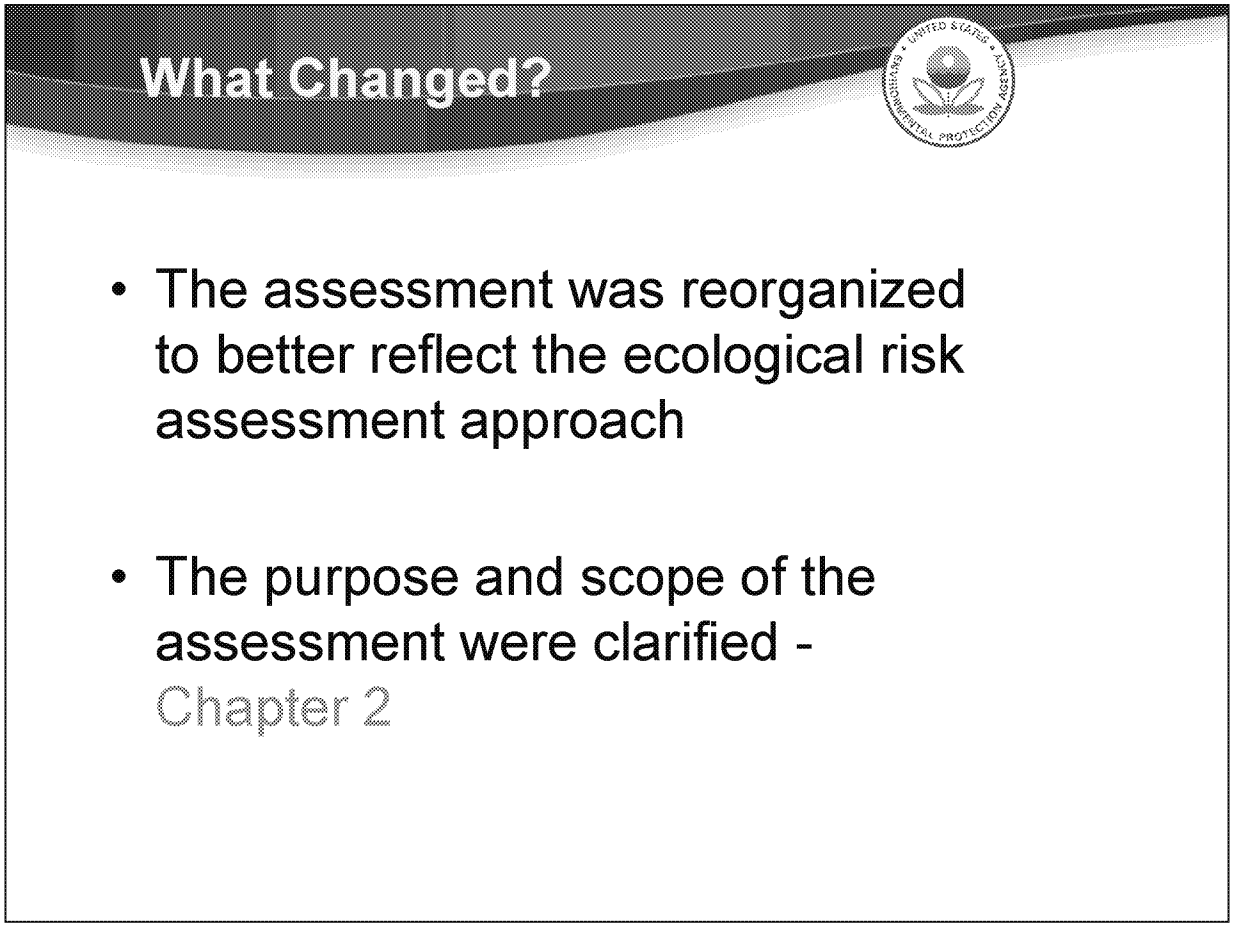


We initiated the assessment at the urging of many Bristol Bay tribes and continuing coordination as well as formal consultation from those of you who request it is an integral part of our work.

Region 10 Procedures:
http://www.epa.gov/region10/pdf/tribal/consultation/r10_tribal_consultation_and_coordination_procedures.pdf

Information Used To Revise The Assessment

- 233,000 comments from the public by e-mail, mail and public meetings
  - Bristol Bay residents
  - commercial fisherman
  - seafood processors
  - the mining industry
  - sportsmen
  - members of the faith-based community
  - conservation organizations
  - many others
- Expert peer review comments
- Tribal consultation and coordination



The assessment is now organized to start with background information on the region and its resources (Chapters 1-4), then present the endpoints, in this case the fish resources (Chapter 5). Chapter 6 presents the mining scenarios, and Chapters 7 through 14 discuss the risks from large-scale mining to the fishery.

In response to peer review comments, we added information about the scope of the assessment in Chapter 2.

How the Revised Assessment Is Organized – Volume 1

- Description of the region – Chapter 3
- Type of development – Chapter 4
- Assessment Endpoints – Chapter 5
- Mine scenarios – Chapter 6
- Mine Footprint – Chapter 7
- Water Collection, Treatment and Discharge – Chapter 8
- Tailings Dam Failure – Chapter 9
- Transportation Corridor – Chapter 10
- Pipeline Failures – Chapter 11
- Fish Mediated Effects – Chapter 12
- Cumulative Effects of Large Scale Mining – Chapter 13
- Integrated Risk Characterization – Chapter 14

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This shows you the topics of each chapter. As you can see, we expanded the chapters on risk so that each one addresses a specific topic. Chapter 7 looks at effects from the mine footprint alone – we previously called this the "no failure" scenario. The following chapters look at risks from various mining activities during normal operations and if there are accidents or failures.

We received lots of comments on effects on Alaska Native cultures and on wildlife from possible changes in fish. We now give this a separate chapter and include more information on these topics.

We would especially like your input on Chapter 12, which discusses risk to AN cultures, and Chapter 5, which describes local population characteristics and culture.

How the Revised Assessment Is Organized – Volume 2

Volume 2 – Appendices A - D

- Fishery Resources of the Bristol Bay Region – Appx A
- Non Salmon Freshwater Fishes of the Nushagak and Kvichak River Drainages – Appx B
- Wildlife Resources of the Nushagak and Kvichak River Watersheds – Appx C
- Ecological Knowledge and Cultures of the Nushagak and Kvichak Watersheds – Appx D

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The appendices have all been updated based on public and peer review comments, although there are no large-scale changes to the information. The conclusions about the Bristol Bay resources remain the same as in the draft report.

We especially would like your input on Appendix D, which is focused on Alaska Native cultures.

How the Revised Assessment Is Organized – Volume 3

Appendices E – J

- Baseline Levels of Economic Activity and Values – Appx E
- Bristol Bay Marine Estuarine Processes, Fish and Marine Mammal Assemblages– Appx F
- Foreseeable Impacts of Road and Pipeline Development – Appx G
- Geologic and Environmental Characteristics of Porphyry Copper Deposits – Appx H
- Conventional Mitigation Practices for Mine Design, Construction, Operation and Closure – Appendix I
- Compensatory Mitigation and Large Scale Hard rock Mining – Appendix J

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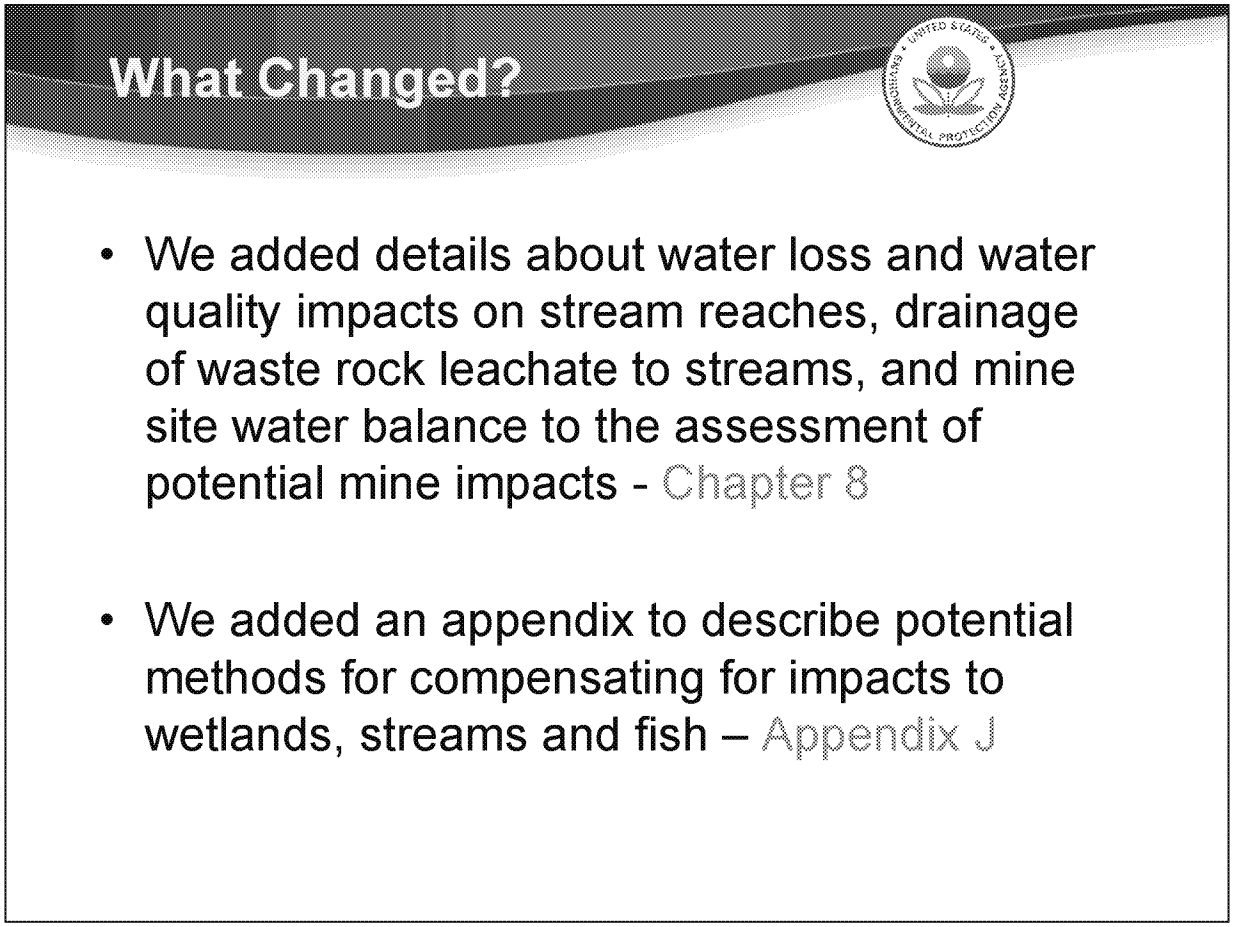
We added one appendix in response to public and peer review comments. Appendix J has information on compensatory mitigation – that is, restoration of wetlands, streams, or other aquatic resources that would be required to offset any impacts to those resources.



Commenter's thought we did not pay enough attention to the water loss from mining and from leakage from waste rock piles and tailings storage to groundwater and streams. Therefore, we added more information about these risks.

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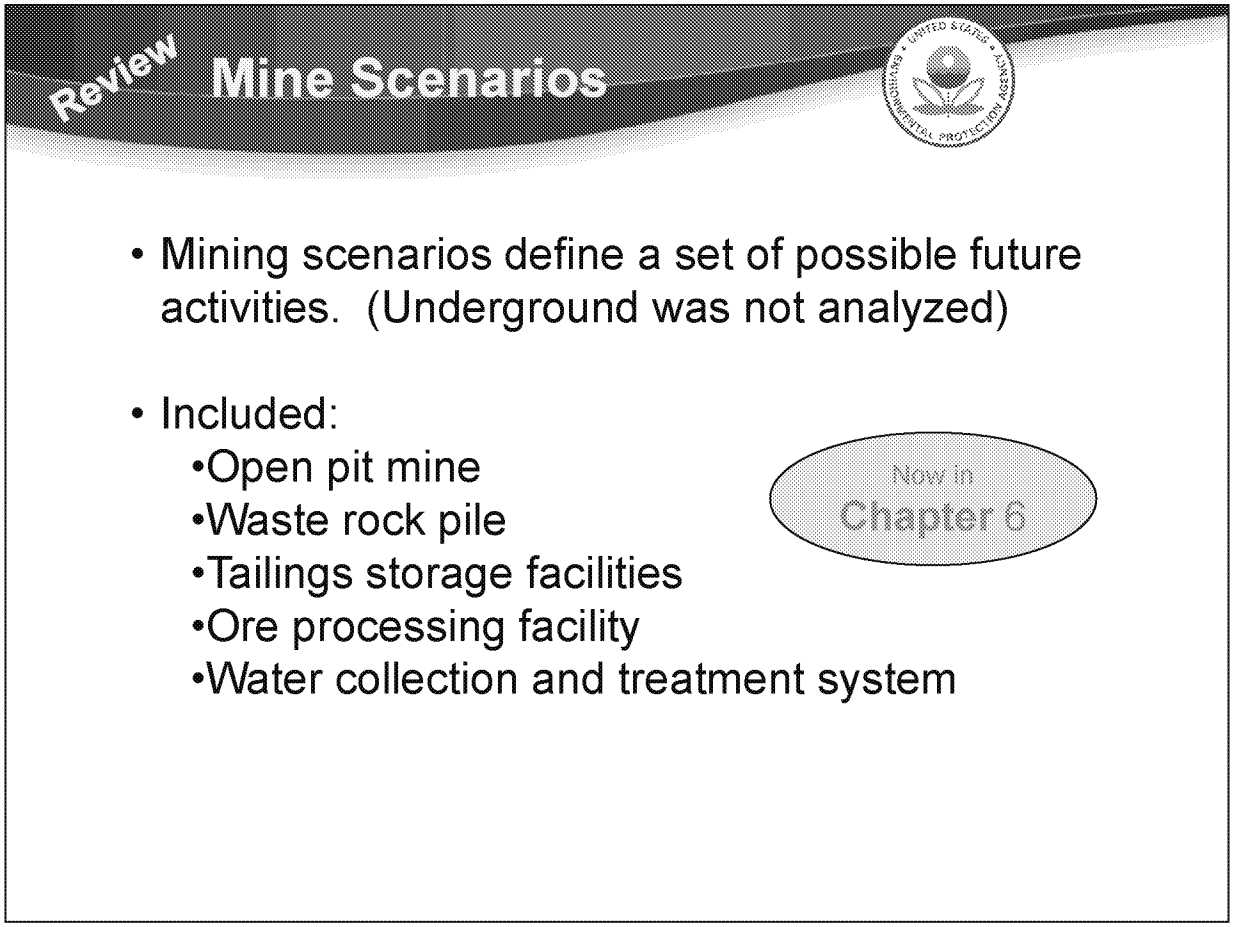
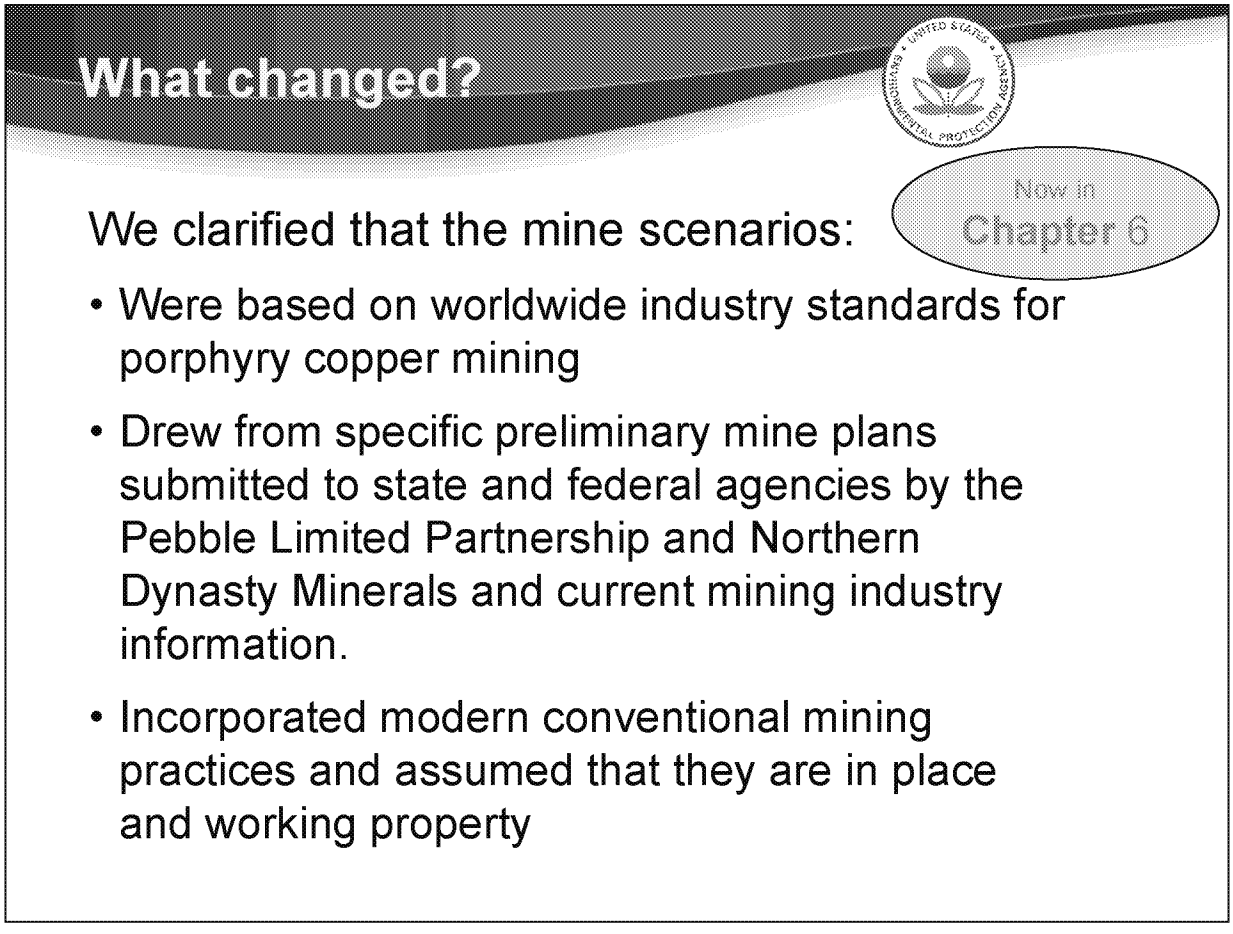


The assessment describes the elements of a typical copper mine at the Pebble deposit. Any mine in this area would include the mine itself, as well as areas to store a large quantity of waste rock and mine waste, or tailings.



In the draft assessment, we used two mining scenarios at the Pebble deposit. In response to comments, we added more information about the assumptions of our mining scenarios and the information we used for the scenarios.

We clarified that we used information from the preliminary mine plan submitted to state and federal agencies by the mining company and published information about porphyry copper mining.

We confirmed that our scenarios use modern conventional mining practices, would be operated under standard industry practices, and have mitigation measures in place to protect the environment.

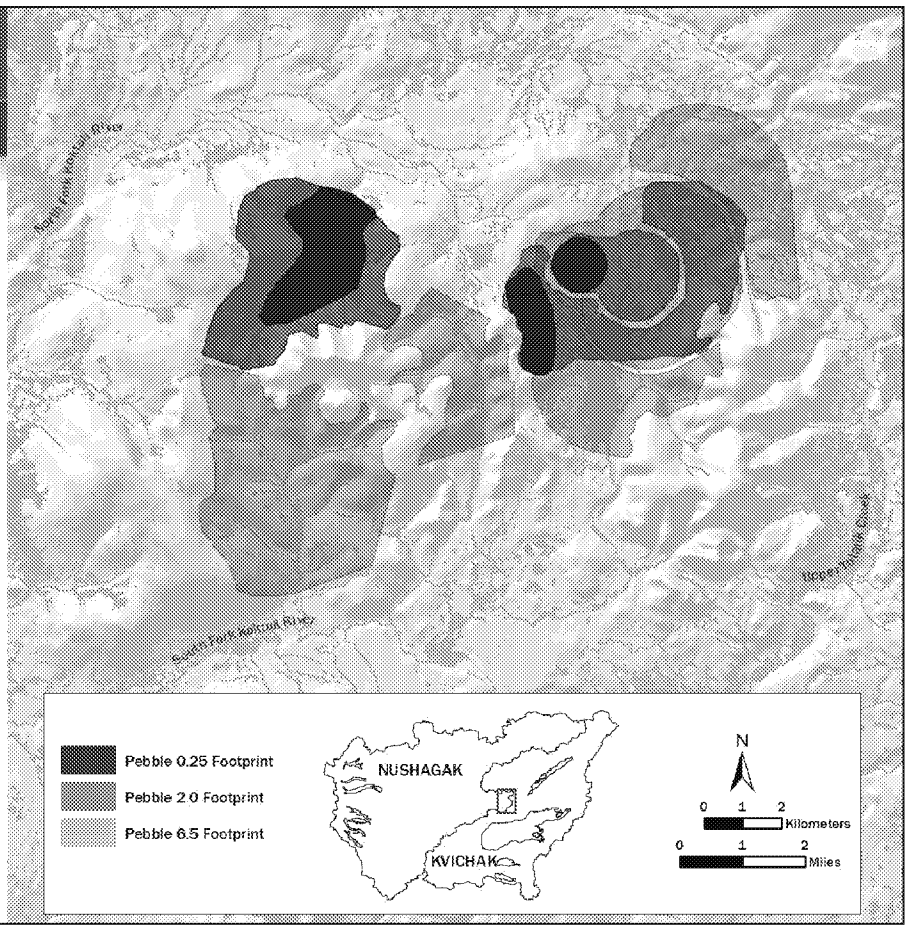
We used the Pebble deposit because there is more information about it and it is the most likely to be developed in the short term. In the revised assessment, we included more information about other deposits in the watershed and the potential risks from mining at those deposits (Chapter 13).

We do not need a detailed mine plan or design, since our purpose is to look at possible effects from the footprint of a mine and mining activities on the salmon ecosystem.

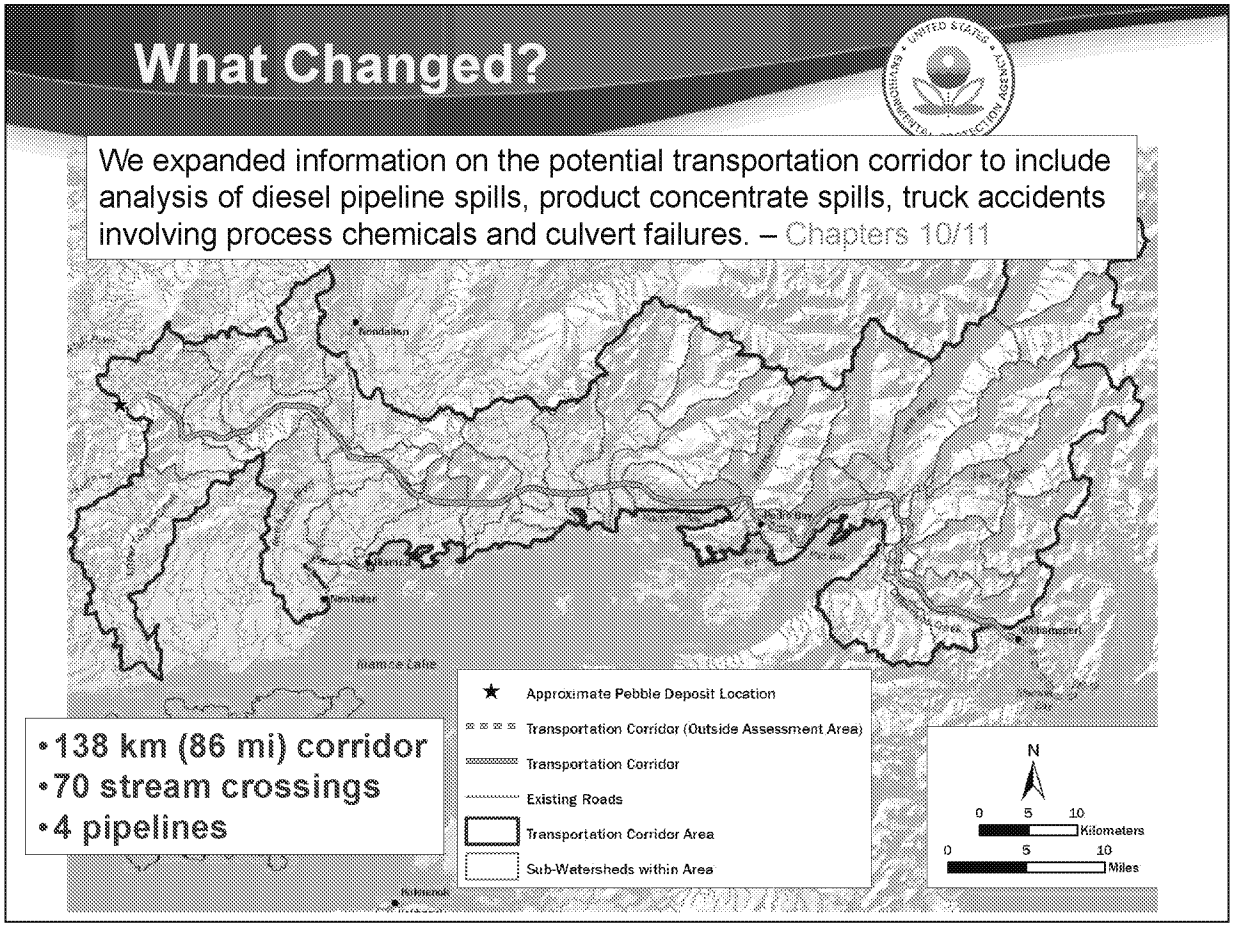
We recognize that a mine plan submitted by a mining company may be different, but will still have the basic elements in our scenario.

Mine Scenarios

We added a third realistic mine scenario to make sure we could assess risk for a range of mine sizes and operating conditions



We also added a smaller mining scenario at the suggestion of the peer review comments. While this size may not be economically feasible at the large Pebble deposit, it allows us to look at effects of smaller mines in other areas of the watersheds.



We also looked at possible effects from building an 86 mile road and moving the processed ore to Cook Inlet through pipelines along the road.

In response to comments, we added more information about the transportation corridor and looked at risks from diesel pipeline spills, product concentrate spills, and truck accidents.

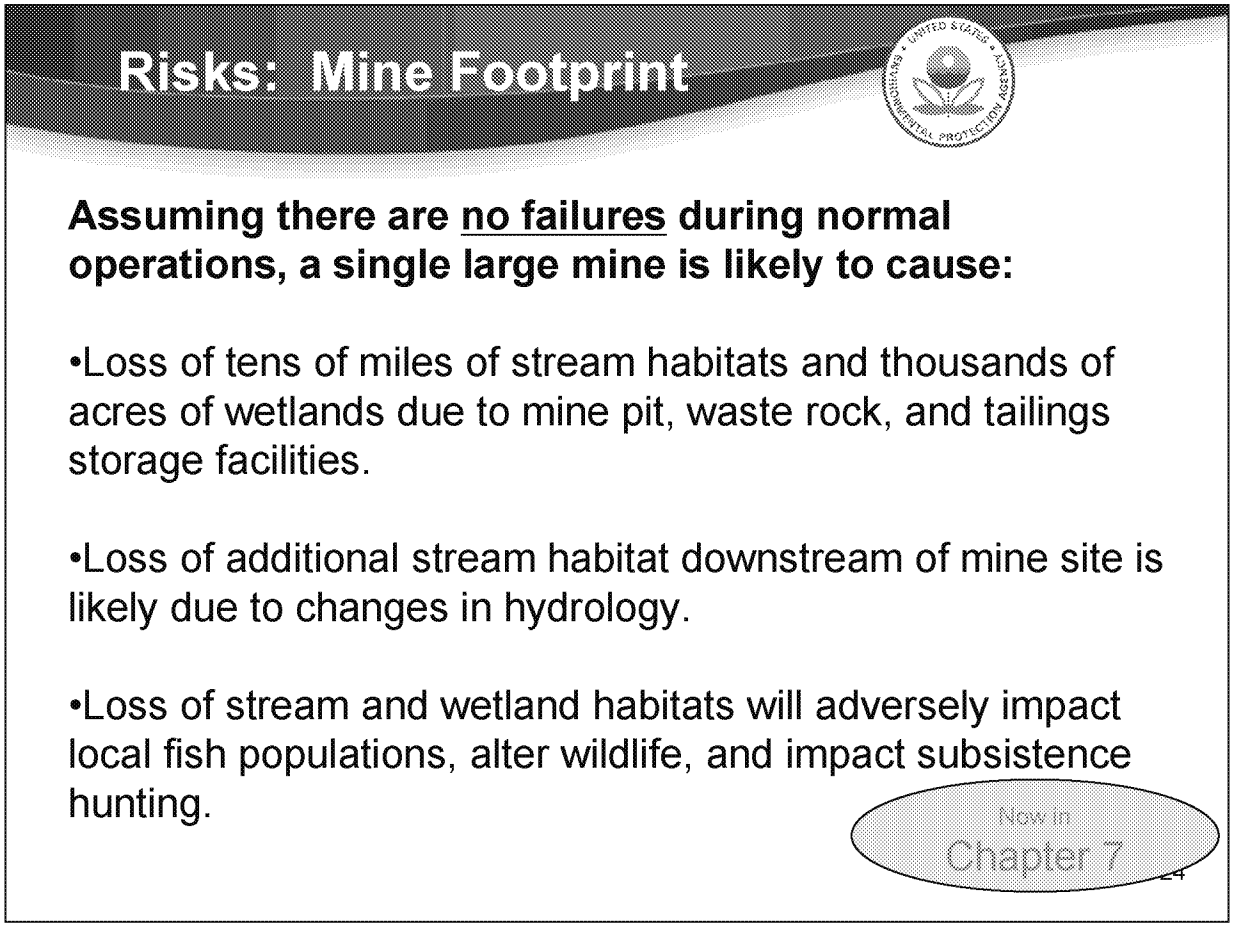
While a mine plan may not have a transportation corridor in this exact location, any road or pipeline in this area would have to cross wetlands and salmon streams, so risks would be similar.

Findings and Conclusions

Basic conclusions remain the same as in the 2012 assessment. The revised draft reinforces the preliminary findings. Additional risks were evaluated based on public, peer and tribal input.

Overall, there is more detailed information in this draft, and some additional risk scenarios were included. However, our basic findings remain the same as the first draft.

We appreciate the input we got from the public, tribal governments, and the peer reviewers – it has helped us improve the assessment.

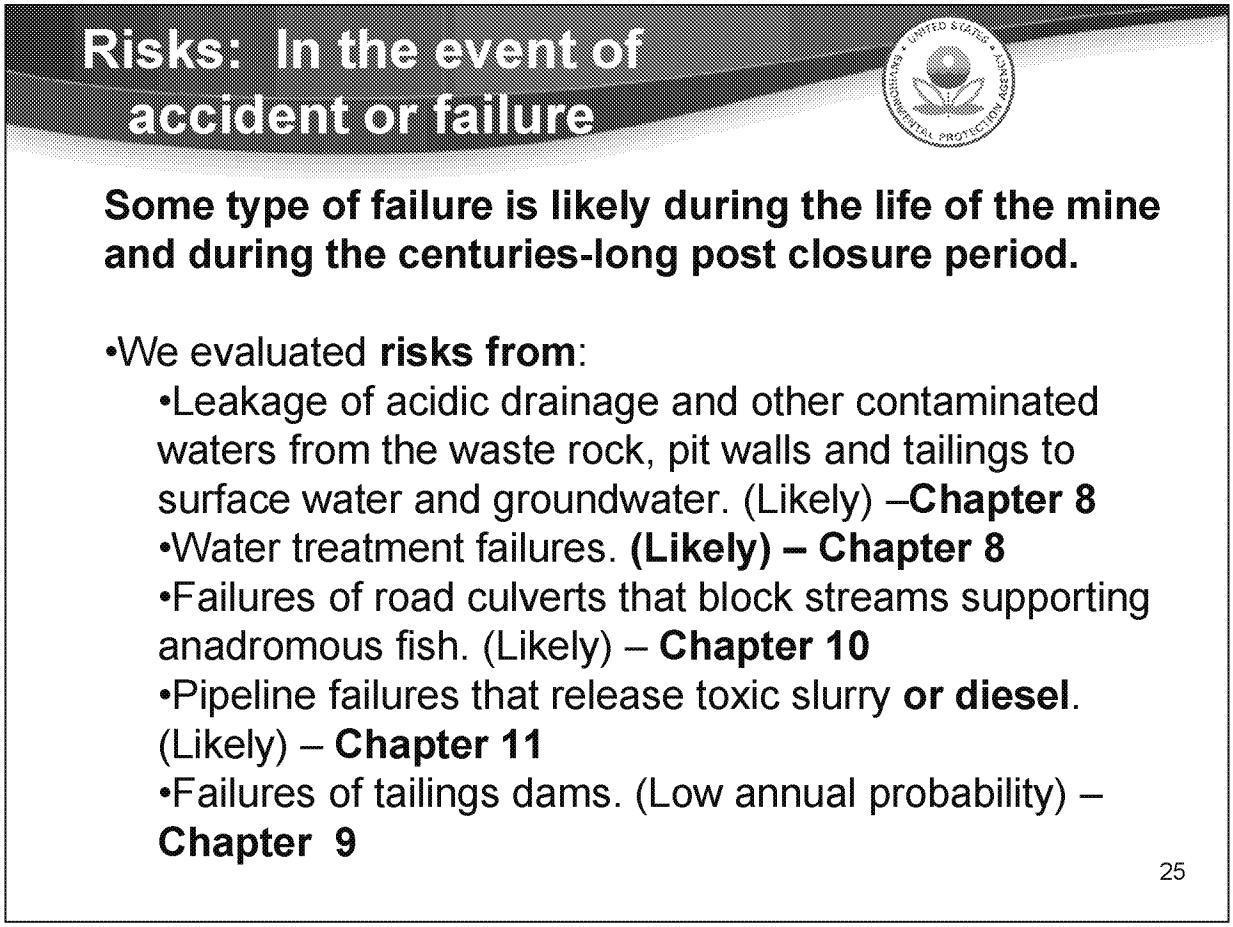


Now we will give an overview of our assessment of effects from large-scale mining to the fishery.
These are the effects just from the footprint of the mine and the mine waste facilities.

NEED TO VERIFY IF NUMBERS CHANGED (updated)

The footprint and operation of a single large-scale mine in the headwaters will result in:
Loss of 24 – 90 miles of streams and 1200 to 4800 acres of adjacent wetlands due to mine footprint alone.
Because water will be withdrawn for the mine operations, it will change the hydrology of the watershed and there will be degraded habitat in an additional 9.3 – 34 mi beyond the footprint of the mine.

These effects will reduce the fish and wildlife populations around the mine site.



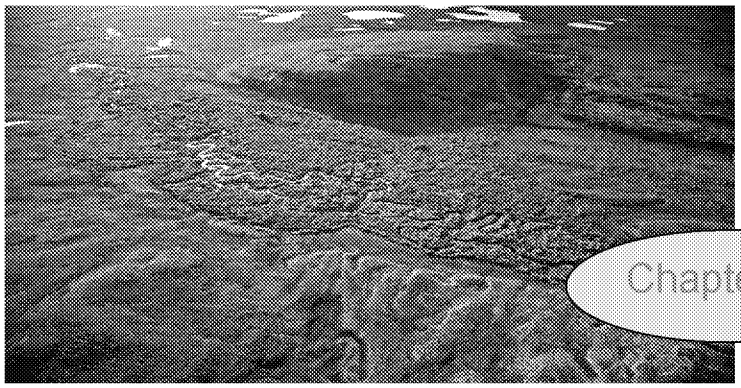
We looked at some common failures, which could happen during the operation of the mine, or for centuries after the mine is closed:

Drainage or leakage from the mine wastes.
Failures of road culverts.
Failures of the pipelines carrying diesel to the mine site or ore to the port.
And
Failure of a tailings dam.

We evaluated each of these scenarios, and the risks to salmon they represent.

Cumulative Risk From Large Scale Mining

- Draft assessment considers development of mines at several different mineral deposits.
- Discusses induced development from mining.
- Risks from multiple mines would increase habitat loss.



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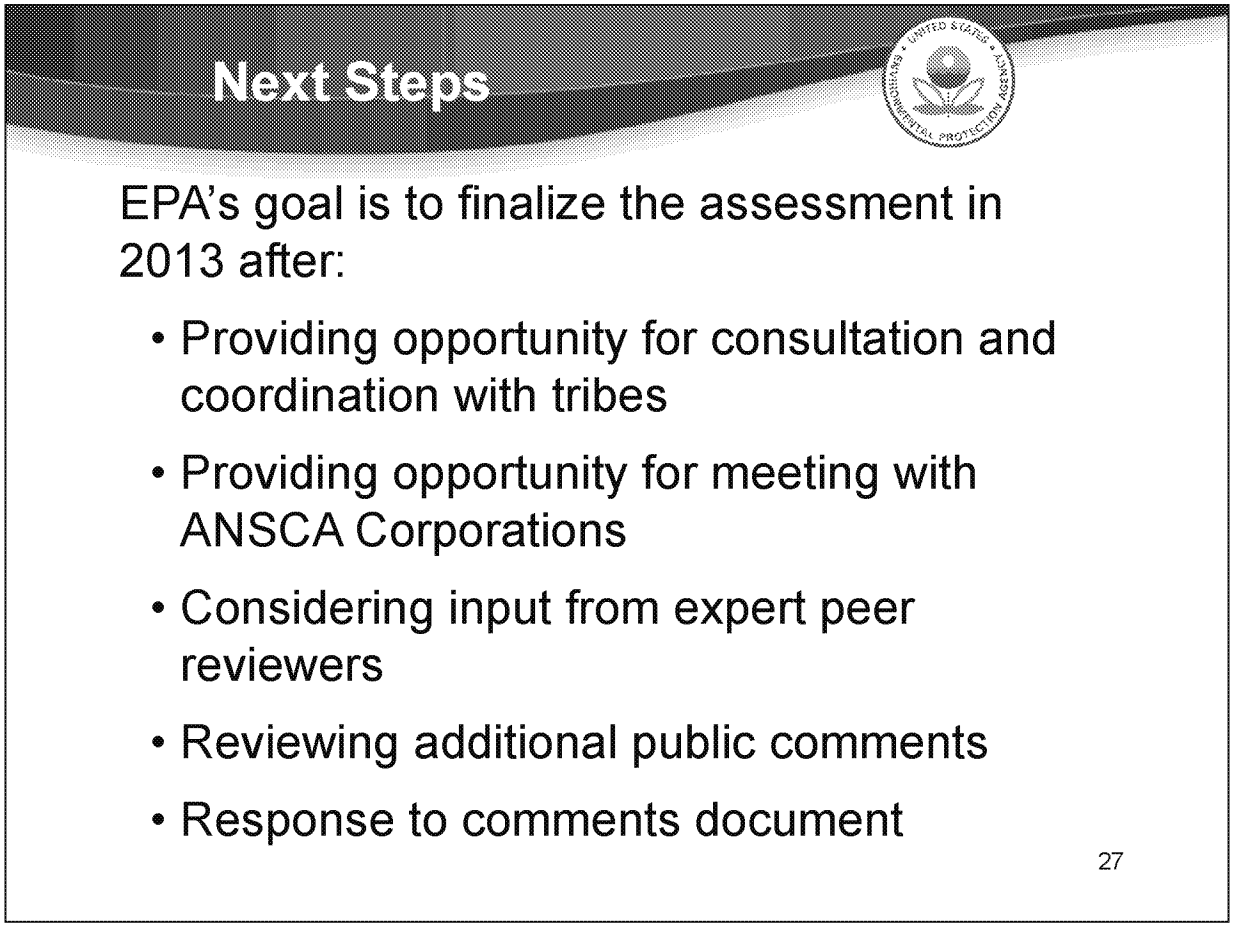
The Pebble deposit is the largest, but not the only mineral deposit in the watershed. If mines were developed at each of these deposits, they would have similar effects.

If each individual mine effects local salmon populations, genetic diversity of the salmon stock could be decreased.

Our new Chapter 13 provides more details about other possible mines and risks from those mines.



The project team is currently going through all the input from the peer reviewers and also all of the input we received from the public.

We decided to do a follow-up with the original peer reviewers to make sure that the revised assessment addresses their concerns.

We plan to have the assessment completed in 2013.

The final assessment will include a document that provides a response to all public comments and a response to the peer review comments.

I know many people would like to hear more about the changes, but we don't want to take things out of context or jump to conclusions. We want to insure that this is the best science available and we want to make sure we get things right.

We would value your feedback on all aspects of the assessment, including:

- Endpoints for Salmon and Other Fishes, Wildlife and Alaska Natives - Chapter 5
- Fish mediated effects on wildlife and Alaska Natives – Chapter 12
- Integrated Risk Characterization – Chapter 14
- Ecological Knowledge and Cultures of the Nushagak and Kvichak Watersheds - Appendix D

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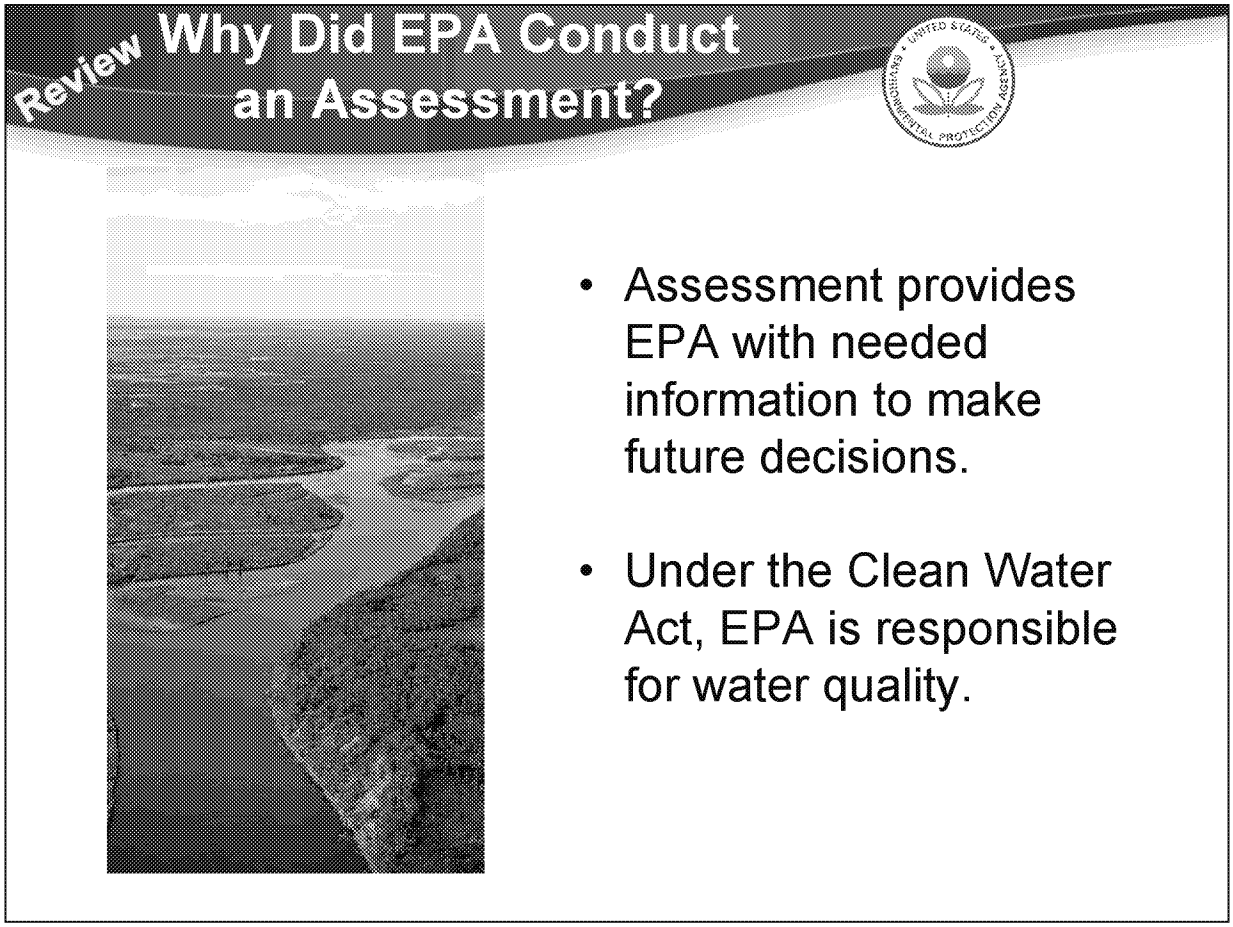
I am very humbled when I talk to tribes, since your knowledge of Bristol Bay salmon goes back thousands of years further than our involvement in the watershed. Because of your intimate understanding of this area, we would value your input on the parts of the assessment that address culture and ecological knowledge


Questions?

For More Information

- **Rick Parkin**, Senior Management Lead, 206-553-8574, parkin.richard@epa.gov
- **Judy Smith,** Community Involvement Coordinator, 503-326-6994, smith.judy@epa.gov
- **Tami Fordham,** Tribal Coordinator, 907-271-1484, fordham.tami@epa.gov

www.epa.gov/bristolbay



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